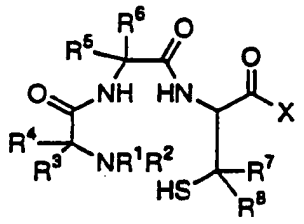
Amendments to the Claims:

1-3. (cancelled)

4. (currently amended) A reagent ~~according to claim 2, wherein~~ comprising a targeting moiety covalently linked via a bivalent linking group to a metal chelator in which the metal chelator ~~has a~~ and the bivalent linking group together have the formula:



wherein:

R^1 and R^2 are each independently H, lower alkyl, hydroxyalkyl (C_2-C_4), or alkoxyalkyl (C_2-C_4);

R^3, R^4, R^5, and R^6 are independently H, substituted or unsubstituted lower alkyl or phenyl not comprising a thiol group, and one of R^3, R^4, R^5, and R^6 is ~~Z-L-$(CR_2)_n$-~~ -L-$(CR_2)_n$- where n is an integer from 1 to 6, and each R is independently H, lower alkyl, or substituted lower alkyl;

R^7 and R^8 are each independently H, lower alkyl, lower hydroxyalkyl or lower alkoxyalkyl;

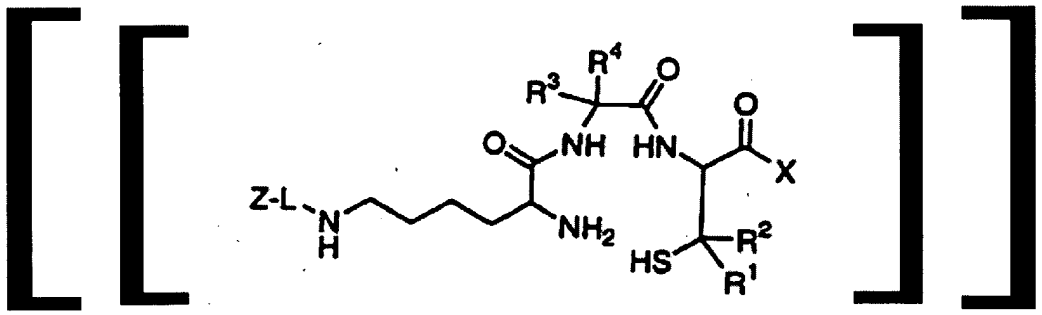
~~L is a bivalent linking moiety;~~

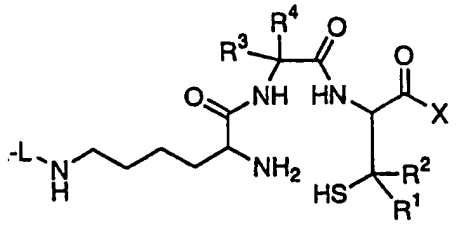
~~Z is a targeting moiety; and~~

X is $-NH_2$, $-NR^1R^2$, or $-NR^1$-Y, where Y is an amino acid, an amino acid amide, or a peptide of from 2 to about 20 amino acids; and

L is the bivalent linking group.

5. (currently amended) A reagent according to claim 4, wherein the metal chelator ~~has~~ and the bivalent linking group together have the formula:





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wherein:

R^1 and R^2 are each independently H, lower alkyl, hydroxyalkyl (C_2-C_4) or alkoxyalkyl (C_2-C_4);

R^3 and R^4 are independently H, substituted or unsubstituted lower alkyl or phenyl not comprising a thiol group;

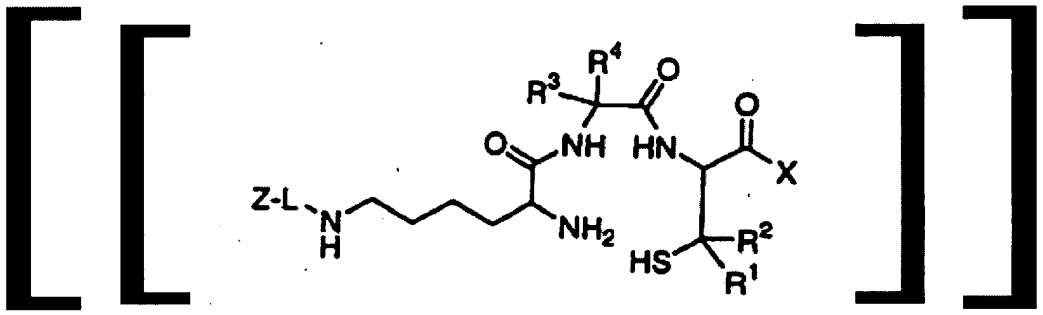
~~L is a bivalent linking moiety;~~

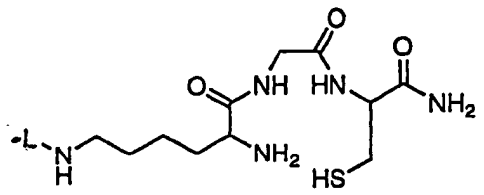
~~Z is a targeting moiety; and~~

X is $-NH_2$, $-NR^1R^2$, or $-NR^1$-Y, where Y is an amino acid, an amino acid amide, or a peptide of from 2 to about 20 amino acids; and

L is the bivalent linking group.

6. (currently amended) A reagent according to claim 5, wherein the metal chelator ~~has a~~ and the bivalent linking group together have the formula:





wherein:

L is ~~a linker~~ the bivalent linking group~~; and~~

~~Z is a targeting moiety~~.

7. (cancelled)

8. (currently amended) A reagent according to claim ~~7~~ 4, wherein the metal chelator is selected from the group consisting of (amino acid)^1-(amino acid)^2-cysteine- and (amino acid)^1-(amino acid)^2-penicillamine-

wherein:

(amino acid)^1 does not comprise a thiol and is either ~~a~~ an α,ω- or a β,ω-diamino acid having a free α-amine or β-amine, and

(amino acid)^2 is a primary α- or β-amino acid not comprising a thiol.

9-37. (cancelled)

38. (new) A reagent according to claim 8, wherein the metal chelator has a formula selected from the group consisting of:

-(ε-Lys)-Gly-Cys-,

-(δ-Orn)-Gly-Cys-,

-(γ-Dab)-Gly-Cys- and

-(β-Dap)-Gly-Cys-.

39. (new) A reagent according to claim 4 wherein L comprises an amino acid or a peptide comprising from 2 to about 20 amino acids.

40. (new) A reagent according to claim 4 wherein the targeting moiety is a specific binding peptide comprising from 3 to about 45 amino acids.

41. (new) A reagent according to claim 40 selected from the group consisting of:

(DTPA).Nal$_D$.Cpa.YW$_D$KT.Nal.T(ε-K)GCKK.amide

F$_D$.Cpa.YW$_D$K.Abu.Nal.T(ε-K)GC.amide

CH$_2$CO.FFW$_D$KTFC(ε-K)GC.amide

cyclo(*N*-CH$_3$)FYW$_D$KV.Hcy.(CH$_2$CO.(ε-K)GC.amide

acetyl.F$_D$FYW$_D$KTFT(ε-K)GC.amide

(DTPA).F$_D$FYW$_D$KTFT(ε-K)GC.amide

acetyl.F$_D$FYW$_D$KTFTGGG(ε-K)GC.amide

(DTPA).(ε-K)GCF$_D$FYW$_D$KTFT.amide

acetyl.F$_D$FYW$_D$KTFTGGG(ε-K)GC.amide

F_DCpa.YW$_D$KTFTGGG(ε-K)GC.amide

(DTPA).F_D.Cpa.YW$_D$KTFT(ε-K)GC.amide

(DTPA).Nal$_D$.Cpa.YW$_D$KTFT(ε-K)GC.amide

(DTPA).Aca.F_D.Cpa.YW$_D$KTFT(ε-K)GC.amide

cyclo(*N*-CH_3)FYW$_D$KV.Hcy.(CH_2CO.K(ε-K)GC.amide)

(DTPA).Nal$_D$.Cpa.YW$_D$KTFT(ε-K)GCKK.amide

acetyl.KKKKK.Nal$_D$.Cpa.YW$_D$KTFT(ε-K)GC.amide

CH_2CO.FFW$_D$KTFCKKKKK(ε-K)GC.amide

CH_2CO.FFW$_D$KTFC(ε-K)KKKKKGC.amide

DDDD.Nal$_D$.Cpa.YW$_D$KTFT(ε-K)GCKKKK.amide

Nal$_D$.Cpa.YW$_D$KTFT(ε-K)GCKK.amide

(2-ketogulonyl).F_D.Cpa.YW$_D$KTFT(ε-K)GC.amide

KDKD.Nal$_D$.Cpa.YW$_D$KTFT(ε-K)GCKDKD.amide

acetyl.KKKKK.Nal$_D$.Cpa.YW$_D$KTFT(ε-K)GCKK.amide

acetyl.Nal$_D$.Cpa.YW$_D$KTFT(ε-K)GCKK.amide

KKKK.Nal$_D$.Cpa.YW$_D$KTFT(ε-K)GCDDDD.amide

(2-ketogulonyl).Nal$_D$.Cpa.YW$_D$KTFT(ε-K)GCKK.amide

Trc.Nal$_D$.Cpa.YW$_D$KTFT(ε-K)GCKK.amide

Hca.Nal$_D$.Cpa.YW$_D$KTFT(ε-K)GCKK.amide

(Trc)$_2$.Nal$_D$.Cpa.YW$_D$KTFT(ε-K)GCKK.amide

K$_D$KKK.Nal$_D$.Cpa.YW$_D$KTFT(ε-K)GCDD.amide

K$_D$DKD.Nal$_D$.Cpa.YW$_D$KTFT(ε-K)GCKDKD.amide

cyclo(*N*-CH_3)FYW$_D$KV.Hcy.(CH_2CO.KKKKK(ε-K)GC.amide

F_D.Cpa.YW$_D$KTFT(ε-K)GCR.amide

(Trc-imide).Nal$_D$.Cpa.YW$_D$KTFT(ε-K)GCR.amide

Trc.(Trc-imide).K.Nal$_D$.Cpa.YW$_D$KTFT(ε-K)GCRR.amide

(Trc-imide)$_2$K.Nal$_D$.Cpa.YW$_D$KTFT(ε-K)GCR.amide

cyclo(*N*-CH_3)FYW$_D$KV.Hcy.(CH_2CO.(ε-K)GCK.amide)

(*acetyl*.TKPRGG)$_2$K(ε-K)GC.amide

acetyl-DDD.Nal$_D$.Cpa.YW$_D$KTFT(ε-K)GCKK.amide

$K_DKK.Nal_D.Cpa.YW_DKTFT(\epsilon\text{-}K)GCDDD.amide$

$D_DDF_D.Cpa.YW_DKTFT(\epsilon\text{-}K)GCKK.amide$

acetyl.$D_DDF_D.Cpa.YW_DKTFT(\epsilon\text{-}K)GCKK.amide$

$K_DKKKF_DK.Cpa.YW_DKTF,Nal.(\epsilon\text{-}K)GCDDDD.amide$

$D_DF_D.Cpa.YW_DKTFT(\epsilon\text{-}K)GCKK.amide$

acetyl.$D_DF_D.Cpa.YW_DKTFT(\epsilon\text{-}K)GCKK.amide$

$F_D.Cpa.YW_DKTFT(\epsilon\text{-}K)GCKK.amide$

$Nal_D.Cpa.YW_DKTFT(\epsilon\text{-}K)GCKK.amide$

$F_DFYW_DKTFT(\epsilon\text{-}K)GCKK.amide$

$\underline{CH_2CO.Y_D.Apc.GDC}GGC_{Acm}GC_{Acm}GGC.amide)_2(CH_2CO)_2K.(\epsilon\text{-}K)GC.amide$

$\underline{CH_2CO.Y_D.Apc.GDC)_2}K.(\epsilon\text{-}K)GCG.amide$

$K_D.Nal_D.Cpa.YW_DKTFT(\epsilon\text{-}K)GCD.amide$

$K_DK.Nal_D.Cpa.YW_DKTFT(\epsilon\text{-}K)GCDD.amide$

$\{(\underline{CH_2CO.Y_D.Apc.GDC}G)_2KG\}_2.K(\epsilon\text{-}K)GCG.amide$

$\{(\underline{CH_2CO.Y_D.Apc.GDC}GGCG.amide)(CH_2CO)\}_2.K(\epsilon\text{-}K)GC.amide$

$(\underline{CH_2CO.Y_D.Apc.GDC}KKG)_2K(\epsilon\text{-}K)GC.ß\text{-}Ala.amide$

$(\{(\underline{CH_2CO.Y_D.Apc.GDC}GGC_{Acm}GC_{Acm}GGC.amide)(CH_2CO)\}_2.K)_2K(\epsilon\text{-}K)GCG.amide$

cyclo$(\underline{N\text{-}CH_3)FYW_DKV.Hcy}.(CH_2CO.K(\epsilon\text{-}K)KCK.amide)$

cyclo$(\underline{N\text{-methyl})FYW_DKV.Hcy}.(CH_2CO.(ß\text{-Dap})KCR.amide)$

cyclo$(\underline{N\text{-methyl})FYW_DKV.Hcy}.(CH_2CO.(ß\text{-Dap})KCK.amide)$

cyclo$(\underline{N\text{-methyl})FYW_DKV.Hcy}.(CH_2CO.(\delta\text{-Dap})GCK.amide)$

cyclo$(\underline{N\text{-methyl})FYW_DKV.Hcy}.(CH_2CO.(ß\text{-Dap})GCK.amide)$

cyclo$(\underline{N\text{-methyl})FYW_DKV.Hcy}.(CH_2CO.(\epsilon\text{-}K)KGKK.amide)$

cyclo$(\underline{N\text{-}CH_3)FYW_DKV.Hcy}.(CH_2CO).K(\epsilon\text{-}K)GC.amide)$

(DTPA).$Nal_D.Cpa.YW_DKTFT(\epsilon\text{-}K)GCKK.amide$

(DTPA).$Nal_D.Cpa.YW_DKT.Nal.T(\epsilon\text{-}K)GCKK.amide$

cyclo$(\underline{N\text{-}CH_3)FYW_DKV.Hcy}.(CH_2CO).(\epsilon\text{-}K)GC.amide$

KDKD.$Nal_D.Cpa.YW_DKTFT(\epsilon\text{-}K)GCKDKD.amide$

(2-ketogulonyl)$F_D.Cpa.YW_DKTFT(\epsilon\text{-}K)GC.amide$

acetyl.$Nal_D.Cpa.YW_DKTFT(\epsilon\text{-}K)GCKK.amide$

{($CH_2CO.Y_D$.Apc.GDCGGC$_{Acm}$GC$_{Acm}$GGC.amide)$_2$(CH_2CO)$_2$K}$_2$.K(ε-K)GCG.amide

($CH_2CO.Y_D$.Apc.GDCKGCG.amide)$_2$(CH_2CO)$_2$K(ε-K)GC.amide

($CH_2CO.Y_D$.Apc.GDCKGG)$_2$K(ε-K)GC.ß-Ala.amide

{($CH_2CO.Y_D$.Apc.GDCG)$_2$KG}$_2$K(ε-K)GCG.amide

($CH_2CO.Y_D$.Apc.GDCGGC$_{Acm}$GC$_{Acm}$GGC.amide)$_2$(CH_2CO)$_2$K(ε-K)GC.amide

cyclo(*N*-CH_3)FYW$_D$KV.Hcy.(CH_2CO).(ε-K)GCK.amide

cyclo(*N*-CH_3)FYW$_D$KV.Hcy.(CH_2CO.GC.Dap.Dap.amide)

cyclo(*N*-CH_3)FYW$_D$KV.Hcy.(CH_2CO.(ß-Dap)KCR.amide)

cyclo(*N*-CH_3)FYW$_D$KV.Hcy.(CH_2CO.(ß-Dap)KCK.amide)

cyclo(*N*-CH_3)FYW$_D$KV.Hcy.(CH_2CO.(γ-Dab)KCR.amide)

cyclo(*N*-CH_3)FYW$_D$KV.Hcy.(CH_2CO.(δ-Orn)GCK.amide)

cyclo(*N*-CH_3)FYW$_D$KV.Hcy.(CH_2CO.(ß-Dap)GCK.amide)

acetyl.KKKKKK(ε-K)GCGGPLYKKIIKKLLES

($CH_2CO.Y_D$.Amp.GDC.KGCG.amide)$_2$(CH_2CO)$_2$K(ε-K)GC.amide

and

($CH_2CO.Y_D$.Amp.GDC.GGC$_{Acm}$GC$_{Acm}$GGC.amide)$_2$(CH_2CO)$_2$K(ε-K)GC.amide.